

## THE FUTURE OF THE FIELD ARTILLERY

BY

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# USAWC STRATEGY RESEARCH PROJECT

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## **ABSTRACT**

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Since the beginning of Operation Iraqi Freedom (OIF), the Field Artillery (FA) branch, more than any other branch in today's Army, has been asked to conduct in-lieu of missions instead of its core fire support mission in support of the war. This deterioration of core competencies could possibly have a major impact in future operations as the FA branch has also moved to a more strategically important role with an improved ability to perform missions using precision strike weapons. This study will identify how long it would take to: restore FA core competencies in support of Major Combat Operations (MCOs); how the branch could best be balanced in order to support current operations as well as prepare for future operations; when should the branch be ready to conduct operations in either a hybrid or MCO environment; and how much lead time would be needed to ensure success in either operation. Addressed throughout the paper are Doctrine, Organizational, Training, Material, Leadership and Education, Personnel, and Facilities (DOTMLPF) recommendations to enhance the Army's capabilities and capacity to address FA challenges. Recommendations will include options for Army as well as FA initiatives to enhance intraservice operations.

## THE FUTURE OF THE FIELD ARTILLERY

Since the beginning of Operation Iraqi Freedom (OIF), the Field Artillery (FA) branch, more than any other branch in today's Army, has been asked to conduct in-lieu of missions instead of its core fire support mission in support of the war. This deterioration of core competencies could possibly have a major impact in future operations as the FA branch has also moved to a more strategically important role with an improved ability to perform missions using precision-strike weapons. This study will identify how long it would take to: restore our core competencies in support of Major Combat Operations (MCOs); balance the branch in order to support current operations as well as prepare for future operations; conduct operations in either a hybrid or MCO environment; ensure success in either operation and make Doctrine, Organizational, Training, Material, Leadership and Education, Personnel, and Facilities (DOTMLPF) recommendations to enhance the Army capabilities and capacity to address FA challenges. Recommendations will include options for Army as well as FA initiatives to enhance intra-service operations.

### Issues Currently Facing the FA Community

According to the U.S. Fires Center's Field Artillery strategy, dated October 2009, the Field Artillery's mission is to deliver and integrate lethal and non-lethal fires to enable joint and maneuver commanders to dominate their operational environments across the spectrum of conflict.<sup>1</sup> We currently can not live up to this ideal. As stated in a widely circulated white paper authored by three wartime ex-maneuver brigade commanders, entitled "The King and I: The Impending Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commanders":

No branch of the Army has suffered a greater identity crisis than Field Artillery, as a result of transformation, COIN-centric operations and non-standard manpower demands of OIF/OEF. The once-mighty 'King of Battle' has been described by one of its own officers as a 'dead branch walking.' Now the Army is beginning to see real consequences in our ability to integrate fires with maneuver – an important capability for both COIN and High Intensity Operations (HIC). The Field Artillery is in an era of persistent conflict. In fact, one could argue that speed and accuracy counts for as much, if not more, in COIN as in HIC. We believe that it's urgent that we take another look at the structure of this important combat arm.<sup>2</sup>

The comments from this white paper were recognized by not only senior leaders in the FA but also by the senior leaders in today's Army. Everyone understood the issues and the importance of the FA maintaining its core competencies.<sup>3</sup>

The next several decades will be ones of persistent conflict against determined enemies. To remain the world's premier, dominant provider of lethal and non-lethal fires, the Field Artillery must transform into an adaptable force capable of operating in any location and cultural environment, regardless of the demographics. With each passing month that we continue to let these perishable skills atrophy and lose our expert practitioners, we are mortgaging not only flexibility in today's fight, but our ability to fight the next war as well.<sup>4</sup> The Field Artillery must have the capabilities as well as capacity and depth to counter emerging lethal and non-lethal threats while simultaneously retaining its preparedness to conduct major combat operations in a manner that defeats or deters those who threaten our nation's interests and the interests of our allies and partners. The approach must be well planned, measured and deliberate, and has a wider application than just the U.S. Army. The artillerists of the 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> Marine Regiments found that they were no longer employing their units as Marine Corps doctrine postulated, but instead were the well of souls that

provided personnel and units, up to battalion strength, for any nonstandard missions that were required.<sup>5</sup>

#### Restoring Core Competencies in Support of Major Combat Operations (MCOs)

Most FA organizations have performed tasks other than core missions for extended periods of time during the past eight years due to wartime requirements generated by combatant commanders. While they have performed these tasks well, core competencies have eroded, causing proficiency gaps.<sup>6</sup>

The erosion of core competencies cannot be overstated. FA, or fires battalions, have in recent years had significant issues performing the basic tasks required to deliver fires in support of their maneuver commanders. In the artillery community, senior fire support trainers at the Combined Training Centers (CTCs) monitored the decline of lethal fire support skills, both on the gun line and amongst fire support teams. In an unpublished monograph written by the senior fire support trainers at the National Training Center (NTC) and the Joint Readiness Training Center (JRTC) approximately 90% of enlisted and commissioned fire support personnel are tasked by the maneuver unit commanders at the echelon they are now assigned to perform missions outside their fire support planning and execution duties, to great or total exclusion of their Military Occupation Skills (MOS) duties.<sup>7</sup> When FA units arrived at the National Training Center (NTC) in the summer of 2007, the battalion commanders stated that their units were well trained in the basic skill sets of fire support and delivery of fires. Prior to arriving at the NTC they had just completed firing table eight (howitzer section qualification) and some battalions had also conducted table 12 (firing battery qualification) in preparation for their capstone training event. What the Wolf (fire support observer controller (OC)) team found was that the soldiers on the guns, as well



as the officers in leadership positions, were actually unaware or untrained on the basic skills required to conduct delivery of fires.<sup>8</sup> The majority of units observed at the NTC had significant problems in technical gunnery and collective crew tasks. Units were not only unable to perform simple firing tasks, such as howitzer calibration prior to a rotation, it was even not uncommon for batteries to fire rounds out of the safety box during on-site training prior to the start of the rotation. The incidents that occurred were the result of gross crew drill failure. For 155mm Paladin Self Propelled Howitzers (M109A6) this typically involved firing at lay deflection, and/or load elevation, or firing while the tube was in transit to command deflection and quadrant because the tube was primed and hooked up out of sequence. For 155mm and 105mm towed howitzers, charge errors, mis-set fuses, and Fire Direction Center (FDC) database errors were the key culprits of firing incidents.<sup>9</sup>

There are two main reasons for the degradation of core competency skill sets. One reason is that fires battalions, as well as fire supporters, have been used primarily to fill nonstandard missions during their previous deployments into theater. The second reason is that under modularization the responsibility for fire support training rests with maneuver commanders who are neither trained nor resourced to perform these tasks.<sup>10</sup> This trend also remains constant within the USMC artillery community, where eight of ten active duty artillery battalions have deployed (at least once) to Iraq in a non-artillery role.<sup>11</sup>

Once a unit returned to home station, it was not allocated the proper amount of time or other resources to train to the proficiency standard required to deliver fires or provide fire support successfully. A primary reason for the lack of proficiency was due

to the almost immediate rotation of soldiers and leaders upon return to home station. Another issue is that the fires battalion often received another in-lieu-of mission to prepare for: that of a maneuver task force. Once an FA unit received this mission, most commanders quit training on the delivery of fires and fire support, and focused exclusively on the upcoming maneuver mission. Additionally, most BCT FA battalion commanders have not served as the BCT Fire Support Coordinator (FSCOORD), and are in fact completely divorced from fire support planning and the delivery of fires process. Many have even been told by their BCT commanders not to involve themselves in the activities of the Fire Support Cell (FSC) at any level.<sup>12</sup>

Since FA units did not train in the delivery of fires in preparation for non-firing (maneuver) missions, most FA units quit training the two most perishable skills sets in a fires battalion, fire direction and fire support. The skill set that diminishes the fastest if not trained on a continuous basis is fire direction operations, particularly in the digital environment. Based on atrophies produced by non-firing deployments, usually the brand new second lieutenant just arrived from the Field Artillery Basic Officer Leader Course (FA BOLC) is usually the most competent fire direction officer in the battalion<sup>13</sup>. Due to lack of training time, the fire direction Non-Commissioned Officers (NCOs) and soldiers are also not proficient in the basic elements of fire direction operations. There is a general lack of knowledge within most FDCs of what it takes to meet the five requirements for predicted fire<sup>14</sup>. The five requirements for accurate predicted fire are: 1. Accurate target location and size; 2. Accurate firing unit location; 3. Accurate weapon and munition information; 4. Accurate meteorological information; and 5. Accurate computational procedures.<sup>15</sup> At NTC, FDC personnel were able to “knock off the rust”

so they could perform their missions, but only with extensive coaching from the OCs. In a report from the Senior Fire Support representative at the Tactical Training and Exercise Control Group (TTECG) at the Marine Corps Air Ground Combat Center at 29 Palms, California, to the Commanding Officer of the Marine Detachment at Fort Sill, Oklahoma it was also noted that “fire direction accuracy, FDC battle drill, fire mission processing, and battery gunline procedures are all suffering as a result of the varied, ongoing OIF commitments the artillery community is facing in support of the Global War on Terrorism.”<sup>16</sup>

The FA needs to develop a better portable FDC device and software to assist in training soldiers while they are deployed. The Advanced Field Artillery Tactical Data System (AFATDS) is cumbersome to transport and put into operation. A laptop computer with fire direction software and an embedded training scenario would assist soldiers in maintaining their skill sets. Some units conducted digital sustainment training while deployed, but they were still generally rated as below a trained standard when they arrived at the NTC, and 80% of the rotational platoons failed to properly maintain their AFATDS database correctly.<sup>17</sup> Upon arrival back at home station there are some key resources available. The FA school has executed Mobile Training Teams (MTTs) in support of digital refresher training. Additionally, the 18<sup>th</sup> Fires Brigade conducted a MTT which consisted of two weeks of manual gunnery computation and safety training and two weeks of AFATDS refresher training for the fire direction MOS personnel.<sup>18</sup> Also the battle command training centers (BCTCs) or BCTC hubs can now provide digital systems training at little or no expense to the unit, although these are limited to use within the continental U.S.<sup>19</sup>

Fire Support is the other critical skill set in which units are demonstrating training and execution deficiencies. Fire Support soldiers are no longer being trained at either brigade, battalion, or company levels because fire support officers (FSOs) and fire support soldiers are no longer assigned to fires battalions. Under modularity the fire supporters were removed from the FA battalion and reassigned to the maneuver battalion task forces and brigade combat team (BCT) headquarters. This is the single biggest flaw in the modular concept as it relates to fire support, and is most responsible for the decline in the core capability of the fire support system at the brigade level and below.<sup>20</sup> This in turn has resulted in fire supporters not training on fire support skills but focusing more on infantry-related tasks in preparation for an upcoming deployment. Assigning fire supporters to the task force was not necessarily a bad idea, since it forced the fire support personnel to build a stronger relationship with their maneuver counterparts, but the relationship took the fire supporters away from a “fires mentality”, and as a result the ability to train on their basic skill set has eroded over the past eight years. 90% of the fire supporters arriving at CTCs for their Mission Rehearsal Exercise (MRE) in recent years have not conducted basic fire support team certification, and of the 10% who have, most had only conducted written testing. Also, the quality of execution of hands-on testing for the limited few who have conducted it is questionable based on skill atrophy at multiple administering rank levels.<sup>21</sup>

The majority of fire support officers and soldiers currently do not work at mastering fire support-specific skills. This trend starts at the brigade staff and works its way down to the fire support teams. The BCT’s Fire Support Officers (FSOs) are tasked to lead non-lethal planning in priority for the BCT, with predictable results for

lethal fire planning.<sup>22</sup> The BCT FSO usually conducts one of two missions, either: as the lead planner for the BCT; or as the S5, overseeing the planning and execution of non-lethal operations. The FSO is also usually charged with running the majority of the targeting meetings for the BCT, with the main thrust of the targeting being non-lethal in nature. The BCT's fire support NCO (FSNCO) is by far the only person on the BCT staff who is actually focused on lethal fire support operations. A primary concern with this organization for combat is that the BCT's FSNCO is usually junior within the NCO structure and does not understand what is required from him during planning for lethal fires in support of operations. Depending on the experience level of the BCT FSNCO, lethal fire planning usually is not conducted or has been severely degraded at all levels of rotational BCTs during a CTC rotation.<sup>23</sup> The situation is no better at battalion task force level. Most junior enlisted personnel end up as M240 gunners, or infantry fillers. Many FA lieutenants end up as infantry platoon leaders, company executive officers, or lead Company Intelligence Support Teams (CISTs). Most TF FSOs are heavily tasked to work Information Operations (IO), Civil-Military Operations (CMO), and also perform battalion Tactical Operations Center (TOC) battle captain duties.<sup>24</sup> The degradation of fire support skills in the USMC has degraded as well, with forward observer procedures and target location serious areas of concern. The procedures and skills within those two areas are degraded as a direct result of inexperienced Liaison Officers (LNOs) are chiefs who are unable to properly give guidance to maneuver units on the capabilities of the artillery.<sup>25</sup> As a result, lethal fires never get planned in support of the task force commander's operations, because the task force fire support personnel are conducting

missions other than fire support and they lack the knowledge of what needs to happen for lethal fire support planning.

There are several key initiatives that need to be undertaken in order to regain the ability to perform FA core competencies in support of an MCO-capable Army. In order to redevelop these core competencies, FA Commandant and leaders throughout the branch need to relook FA current doctrine to ensure it supports operations in the current operating environment. For example, FM 3-09, *Fire Support*, is the Army's keystone doctrine for fire support. It embodies the doctrinal tenets for the employment of fire support in full spectrum operations. It establishes a basis for understanding fire support as an essential element of combat power.<sup>26</sup> The issue with FM 3.09 is that the manual has been in a draft form since 2007, and still is not published. The FA community is currently operating with FM 6-20, *Fire Support*, which was written using the Airland Battle doctrine of the 1980's. One of the ramifications of not publishing our manual in a timely manner is that FM 3-09 is intended for use by the U.S. joint community and coalition partners to assist in their planning for fire support in all operations<sup>27</sup>. This is why it is imperative that future FA doctrine needs to be updated either through interim field manuals or white papers to assist leaders in training their units.

FA organizations also need to be better tailored to support current operations. The FA Commandant, with assistance from Human Resources Command (HRC), needs to develop and implement a more capably-structured fire support cell from company to Joint Task Force (JTF) levels given the ever increasing importance of synchronizing both lethal and non-lethal operations. This will continue to be a difficult task, since the FA officer attrition rate is currently 13% annually, 3% higher than the

Army rate of 10% and three times higher than historical norms.<sup>28</sup> Of the greatest concern is the exodus of officers at the captain and senior lieutenant rank. Not only are artillery captains more likely than other branch or officer grade to leave the Army, but lieutenants who fill assignments in maneuver units are branch transferring to Infantry and Armor at relatively high levels.<sup>29</sup> The lack of knowledge and experience at the company and field grade levels will continue to have a major impact on how we conduct lethal and non-lethal operations.

The FA needs to develop training that focuses on the basics of fire support, fire direction operations, and the delivery of fires. Is it so important in today's operating environment that the FA conduct *battalion* level exercises, or is the FA better training its *sections* to perform its tasks to the highest standards possible? If the FA focused on highly trained sections it would ultimately allow FA leaders more flexibility when if the FA is called upon to conduct battery or battalion level operations. Since the typical FA battalion's primary mission is maneuver, not delivery of fires, the battalion usually only maintains two to four howitzers out of 18 at some level of readiness to fire.<sup>30</sup> Continuing to train sections to the highest level possible would create depth in units in order to support the basic task of delivering fires, on time and on target. The future of the artillery community lies in the young leaders, at all levels, who are building their basis of experience early in their careers.<sup>31</sup> The days of achieving the minimum standard mindset has to be changed to ensure that FA leaders are the most proficient soldiers in the formation. The FA cannot short change leader education. In an effort to begin to correct the problem at the institutional level, the FA Captain's Career Course has been expanded from twenty to twenty-four weeks, starting in January 2009.<sup>32</sup> The FA also

needs to relook at how it trains NCOs and soldiers to ensure that they have the skill sets required of them once they finish school and are assigned to tactical units. FA NCO Educational System (NCOES) has also suffered during the last five years, with many of the key required courses such as Basic Non-Commissioned Officer Course (BNCOC) and Advance Non-Commissioned Officer Course (ANCOC) shortened or conducted at home station in order for our NCOs to receive required training and advance to their next higher grades. We must retain a strong NCOES or suffer the effect of an insufficiently-trained NCO Corps.

The FA also needs to maintain *distributed* (and therefore readily available) state-of-the art training capabilities to reinforce individual and collective core competencies. There are many state of the art systems available to assist soldiers in maintaining their core competencies, but they are primarily located at Fort Sill and not at other posts throughout the Army. As an example, the Joint Fires and Effects Training System (JFETS) was designed as a training platform for the "universal observer" - allowing any Objective Force soldier, sailor, and airman on the battlefield to call for "joint fires", (lethal and nonlethal employed by all Services, including mortar, cannon, rocket, and missiles from ground, air, and sea-based platforms) but - it is only Ft Sill-based.<sup>33</sup> The Call for Fire Trainer (CFFT) which is also imperative for both developing and maintaining fire support skill competencies, and the Fire Support Combined Arms Tactical Trainer (FSCATT) M109A6 Paladin trainer, which assists in developing and maintaining crew drill, must be distributed to troop posts. To further highlight its value, the FSCATT is a "system of systems" that enables artillery crew members to train on subsystems (Howitzer Crew Trainer or Fire Direction Center Trainer), or in a "closed



loop” mode by adding a Forward Observer simulation<sup>34</sup>. Clearly the FA has been able to produce useful training platforms in recent years - it remains for these devices to be made available in widespread and accessible fashion where artillerymen are assigned. These capabilities must continue to include, but are not limited to, portable immersive virtual training systems, networked collaborative systems to facilitate joint and interagency training, and distributed full-spectrum simulations that enable soldiers to train both while deployed and at home station.<sup>35</sup>

#### How the Branch Could Best be Balanced in Order to Support Current Operations as Well as Prepare for Future Operations

The Army, as well as the FA branch, needs to determine how valuable it is for the FA to maintain a fully functioning fires capability. Can the FA afford to deploy all of its battalions to theater in a maneuver role, or would it be better for the Army to “protect” a minimum number of FA units so they can maintain fire support and delivery of fires tasks? As the branch becomes more technical with the introduction of more precision based projectiles and missiles, does it even make sense for the FA to continue to conduct maneuver-centric operations at all?

The fires battalion is charged to deliver FA munitions precisely where the maneuver or joint forces commander wants them. Precision strike relies on precision targeting and precision engagement technologies.<sup>36</sup> Are the fires battalions going to be able to perform this task for the joint force or maneuver commander if the FA continues to perform in-lieu-of missions? The train up time required to perform precision fire support missions is extremely time intensive given the current lack of training on FA core competencies. Most FA units that rotated through the NTC in the past three years were scheduled to be retrofitted to fire the Excalibur precision projectile prior to

deploying to theater. This retrofit consisted of hardware and software upgrades to the Fire Control System (FCS) as well as the Advanced Field Artillery Tactical Data System (AFATDS). This was followed by new equipment training team (NETT) classes for the soldiers so they could operate the new systems effectively. During this period the unit was also finishing its pre-deployment tasks and conducting block leave. Many commanders were concerned that the time allocated for the training would not be adequate to train their soldiers properly prior to deploying their concern was heightened by the knowledge that the first time that the unit was going to utilize Excaliber was going to be in theater. Leaders also realized that the training they received prior to deploying would be limited to the fires battalion soldiers and leaders, because the fire support soldiers were not always available based on their assignment to maneuver units. This creates an absolutely inadequate situation, as fire support personnel require training on procedures and equipment to ensure the Excalibur precision projectile is properly targeted. Thus, the Excalibur mission required a system-of-systems training approach, but the FA commander did not have all of the system operators within his command to ensure training could be conducted to an acceptable standard.

We, as an Army, and as a branch, also need to increase our active component Fires Brigades from six to ten. It is imperative that we re-align a Fires Brigade with each Division Headquarters. In this era of persistent conflict, Fires Brigades provide three critical capabilities the Army needs: a force fires headquarters to synchronize the precision fires of multiple FA battalions and all other means of joint and combined lethal and nonlethal effects; an organization robust enough to command and control area stability missions; and a senior commander to advise maneuver commanders at up to

division command-level on fires application and training.<sup>37</sup> Currently we have five cannon and eleven Multiple Launch Rocket System/High Mobility Artillery Rocket System (MLRS/HIMARs) battalions assigned to the six Fires Brigades.<sup>38</sup> The tailored Fires Brigade, in accordance with proposed plans would allow us to have twelve cannon and twelve MLRS/HIMARs battalions.<sup>39</sup> The Army needs to continue to develop the remaining FA cannon battalions in the Fires Brigades in order to achieve an even ratio with the MLRS/HIMARs units. Once the FA achieves a balance in the Fires Brigades, commanders could identify fires battalions to focus only on fires-related tasks in order to support joint and maneuver commanders on a more predictive basis. This would allow select fires battalions to possess necessary training time prior to deploying into a theater of operations. They could then perform all the fires-related tasks for the joint or maneuver commander to a high standard.

The fires battalions in the fires brigades are the perfect fit for this type of reinforcing mission. The majority of the fires brigade's battalions could still conduct in-lieu-of missions: conducting convoy operations; providing security; or conducting target acquisition functions. The brigade's fires battalions are usually transitioning from one in-lieu-of mission to another and focus very little on their core competencies when they return from a deployment. The thought pattern for commanders is, "Why worry about conducting field artillery operations since I will probably be sent back in another role?" Again, change the structure of the fires battalions and reconsolidate the fire support elements of each maneuver task force under the command of the fires battalion commander. This will place the responsibility for the entire fire support system where it traditionally lay, back under the BCT Fire Support Coordinator (FSCOORD).<sup>40</sup>

### When Should the Branch be Ready to Conduct Operations in Either a Hybrid or MCO Environment?

The United States can expect to encounter complex, dynamic, and unanticipated challenges to its national security and the collective security of its friends and allies in the years ahead. These challenges will be waged across the entire spectrum of conflict – ranging from peacetime engagements to general war and at all points in between – and in all domains – land, sea, air, space, and cyber.<sup>41</sup> The world that we currently live in, as well as the operating environment that we conduct combat operations in, is ever changing, and the FA needs to be prepared to support the maneuver and joint force commanders when called upon. Our 21<sup>st</sup> century leaders must understand and appreciate the complexity of the dynamic and ambiguous environment in which they operate as well as the subsequent needs of the joint forces commanders.<sup>42</sup> So, when should the Branch be ready to conduct operations in the face of a hybrid or MCO environment? “Now” is the only answer. Short of that, the FA must move as swiftly as possible.

We must continuously examine and re-examine the capabilities required by the Army in order to operate in a MCO or in hybrid operations. Short of any new revelations, there are some easily-identified imperatives. We must continue to pursue a more robust precision capability in order to prosecute the variety of target sets typical of MCO or hybrid operations. We have ensured that the maneuver and joint force commander has a precision-based projectile and missile at the tactical and operational level with the introduction of Excalibur and Guided MLRS. Based on experience and future projections of where conflict is likely to occur, the branch also needs to continue

to pursue a precision-based 105mm projectile that will support the BCT commander in urban terrain.

The FA's ability to perform and conduct both lethal and non-lethal planning will also be required in both operational environments. As stated by the then-Combined Arms Center Commander, LTG Bill Caldwell at the Ft. Sill-based Fires Seminar in June, 2008, "As, artillerymen, you all coordinate and synchronize our non-lethal fires and thus you are more important now than ever in this fight, and I believe you will ultimately determine our success in achieving our political and military objectives abroad."<sup>43</sup> The FA is currently deficient in both areas due to having been assigned numerous in-lieu-of missions over time. The Fires Center of Excellence (FCoE) must do a better job in training the FA officer corps and non commissioned officer corps in developing lethal and non-lethal fires as stated in The Field Artillery Strategy, "FA must be the maneuver commander's principal integrator for lethal and non-lethal joint and combined fires – his trusted agent for all aspects regarding the fires warfighting function."<sup>44</sup>

As a branch, we have a good understanding of non-lethal operations. This is due to the fact that many of our officers and NCOs only focus on non-lethal operations from the Corps to the Battalion TOCs. Many FA officers are assigned the duties of Public Affairs Officer, Information Officer, Commander's Emergency Response Program (CERP) Manager, and Civil Military Affairs Officer. The additional responsibilities are very time consuming, and every minute that the FSO focuses on his additional duties is one that is not spent on fires planning. Many FSOs feel overwhelmed trying to perform duties as planners and executors for both lethal and non-lethal operations. The FA needs to develop a better way of synchronizing both the lethal and non-lethal aspects of

planning, since the FSOs are usually directed to take on this responsibility. As we continue to grow joint fires professionals, we must invest in creating officers and NCOs who can adapt quickly to transitions and function effectively in any physical or cultural joint, interagency, intergovernmental and multinational environment.<sup>45</sup>

We need to continue to develop leaders who understand joint doctrine and how to implement all aspects of fires in joint operations. We must be able to perform the basics of fire support as defined in Joint Pub 3-09, *Joint Fires*, fires that assist air, land, maritime, and SOF to move, maneuver, and control territory, populations, airspace, and key waters.<sup>46</sup> With the degradation of fire support skills at the company, battalion, and brigade levels we are growing a set of leaders who lack the basics of fire support and they will struggle with the complexities of executing joint level fire support operations.

The United States Field Artillery has always been looked upon as being the premier trainers for US forces as well as our coalition partners. With the reduction of core competencies and fire support related experience among our officers and non-commissioned officers, we will reach a point in which we will no longer be able to send quality personnel to fill key positions in training our coalition partners. As we begin to train our Afghanistan Artillery counterparts in FA operations, we must be knowledgeable in own weapon systems as well as our counterparts. For the past three years, the Afghan National Army's field artillery corps has been languishing. It has not progressed beyond simple direct fire despite millions of dollars spent and hundreds of trainers deployed. There are many reasons for this stagnation, but number one among them is the lack of training the U.S embedded training team artillery mentors receive before deployment.<sup>47</sup>

As the Army moves into either a MCO or hybrid operation it is imperative that we continue to be the lead for both lethal and non-lethal fires. Our leaders must be able to access fires at all levels of command and interoperably with coalition forces, in order to integrate lethal and non-lethal networked fires rapidly and to mass precision, scalable munitions in space and time across the spectrum of conflict<sup>48</sup>

#### How Much Lead Time Would be Needed to Ensure Success in Either Operation?

Multiple non-standard mission deployments by FA units have reduced the ability to train beyond the battery level and have affected the units' ability to perform FA core competencies. Fires battalions must have assistance in order to reset effectively and the FCoE must play an integral role in providing that assistance in order to mitigate stress on units. External assistance to fires organizations by the FCoE for training and resourcing will reduce stress on FA units and enable them to restore core competencies up to the battalion level of collective training. The external training must be tailored for each individual unit with recommendations from the battalion commander. Some of the on-site courses required to assist the commander in retraining his soldiers are: Cannon Battery Operations, FA Certifications, AFATDS Digital Operations, Fire Direction Manual Gunnery, FA Weapons Maintenance, Precision Ammunition, and the Master and Digital Master Gunners Courses. These courses should be requested through the Army Training Requirements and Resource System (ATRRS).

The process required to restore fires battalions to their core competencies levels is dependent on the following three key resourcing preconditions in the realms of personnel, equipment, and training:

The FA must man fires battalions at the appropriate levels. Units cannot adequately train without sufficient personnel. As the Army's focus continues to be

support for ongoing operations in the war on terror, the FCoE, as well as the Army, must ensure that this focus does not adversely affect the ability of the branch to be a viable provider of fires in the long term. Lack of sufficient manning will exacerbate skills erosion.<sup>49</sup> Having all the required personnel during the reset and key training periods prior to major training events or even deployment is of the utmost importance. Lack of the required key personnel takes the fires battalion twice as long to train on their basic core competencies tasks, since they will have to retrain numerous times as personnel begin to arrive at the unit. The key personnel that need to be set prior to training the units are: Platoon Leaders; Platoon Sergeants; Section Chiefs; Fire Direction NCOICs; and Senior Fire Support Sergeants. Personnel turbulence and time are the main reasons why units cannot accomplish their basic skill sets: they just run out of time prior to deploying.

The second resourcing requirement is to ensure the receipt of needed equipment both prior to train-up and during the reset period. It is imperative that units receive all the appropriate New Equipment Training Teams (NETT) as well as any equipment upgrades during the initial reset period. The FA needs to leverage new equipment fielding as a means of mitigating shortages and synchronizing reset with the transformation of the branch. This can be accomplished by working with program managers as well as TRADOC capabilities managers, to ensure fielding timelines are well synchronized with unit resets. Resetting fires battalions properly will require the cross leveling of equipment throughout the branch to ensure that the resetting units have all the proper equipment necessary to conduct training.



The third resourcing requirement is to implement training programs that restore core competencies at all levels. Continuous non-standard missions have reduced the ability of our soldiers to maintain personal proficiency in their core competencies. We must mitigate this skills erosion to avoid creating a generation of leaders lacking basic FA skills. Although the short term affect of this skills erosion impacts units' ability to perform their core competencies, the long term effect will be the rise of senior leaders who lack the ability to train their subordinates and units adequately.<sup>50</sup>

The training plan developed by the fires battalion will have to take into account the personnel available as well as the equipment that they have on hand. Training will have to start with the very basics of each MOS and FA Gunnery, ensuring FM 3-09.8, *Field Artillery Gunnery*, is the key manual in establishing the basic training tables. This manual has been found by FA battalion commanders to be extremely helpful during reset. It comprehensively specifies the requirements to train and certify soldiers on the tasks for fire support, howitzer, MLRS, radar, and FDCs. The tables are laid out in a logical sequence and start at basic individual skill tasks and continue through collective training through battery level qualification. The FM provides all the necessary requirements prior to moving on to battalion level certification and qualification. This framework has been found to be critical for battery commanders as well as young staff officers returning from a non-standard deployment. Many of them had never trained field artillery related tasks nor conducted section level qualifications. FM 3-09.8 can quickly be referenced as to how to conduct a task or to verify standards, which greatly assists in preparing and executing training plans. The manual must be updated, however, since the tables enclosed in the document only train up to battery level. In

summary, as the Army transitions back to MCO operations the FA FCoE needs to ensure that the FM addresses both battery and battalion training and evaluations.

As the FA qualifies sections to the highest level possible prior to deploying, FA units should still train, evaluate, and certify batteries and battalions through external evaluations. The FA needs a mechanism in place to ensure sequential, standardized, externally-evaluated training is conducted. Currently, the first time a battalion receives an external evaluation is during a rotation at one of the training centers. The training center experience is often soon followed by a deployment to an in-lieu-of environment, of such a duration that it causes identified deficiencies to become largely lost in the unit's memory. If the battalions' key personnel rotate away upon redeployment, the evaluation lessons vanish.

A critical element missing in the evaluation process is the lack of a higher local headquarters to provide the evaluation. No proximate headquarters is available to certify and evaluate units above the section level, given the removal of Division Artilleries from the Army structure. The fires brigades also no longer have the needed expertise to conduct this type of evaluation for all the units currently assigned to them, because the majority of the mid-level and junior officers and NCOs have never received an external evaluation and lack the required fires knowledge to conduct a proper evaluation to standard. An associated issue is that the FA's current evaluation standard baselines, its Mission Training Plans (MTPs), are out of date. Many of the MTPs that were available to train at the battery and battalion levels in the past have been rescinded, and no new standards have been implemented. The FA needs to ensure

that the FCoE develops and updates FA MTPs so that the FA community has a baseline on how to evaluate units higher than section level.

An interim evaluation fix would be to build OC packages from the FCoE that would certify and evaluate both battery and battalion evaluations. This option will require additional personnel and equipment resources, but it would ensure that everyone in the field artillery community is trained to the same standard across the branch. It would also identify shortages in both personnel and equipment that would be required to reset the unit completely, providing direct feedback to the Commanding General, FCoE. How long does it take for a fires capability to be regained as it resets, after a period of basic skill atrophy? By observation, training to the section level takes approximately three months, with a battery taking six to nine months depending on the conditions which exist during the reset period. Even if the FA ensures that the proper manning, equipment, and training are available to certify up to the battalion level, senior Army leaders have recognized that FA units are not going to be able to reset properly until the units receive up to 18 months back at home station to train.<sup>51</sup> Only then will a maneuver or joint forces commander enjoy the support of a unit able to contribute fully to a high intensity combined arms fight. A proper reset must be conducted in order to ensure lethal and precision fires can be delivered on time and on target in operations up to MCO level.

### Conclusion

The Field Artillery (FA) branch has many challenges at this time, and if it does not start to rectify the problems soon, they will be too many to overcome. As stated in October 2008 by USMC Major Michael Grice, in his article “Resuscitating the King”:

The future of the artillery community lies in the young leaders, at all levels, who are building their basis of experience early in their careers. Over five years of COIN warfare have taken their toll on the skills of artillerymen. Many young Marines have become NCOs and many lieutenants become captains with virtually no experience in their military occupational specialty (MOS).<sup>52</sup>

The FA has already started to lose good officers to other branches because they see the branch as a dying entity. The majority of our soldiers joined the FA so they could provide fires in support of the maneuver commander. Unfortunately, this has not always been possible due to all the non-standard missions that the FA community has been charged with in the years since OIF. Can the branch be fixed? The answer is yes, but it will take some time to retrain our core competencies to the standards that are required and that will restore our reputation. The requirements to achieve the goal of providing timely and accurate fire support will require assistance from both the Fires Center of Excellence as well as the Army. We owe this effort to our maneuver commanders and joint forces commanders to provide them the best fire support we can when we are called on to do so. We cannot allow soldiers to enter battle without a trained and proficient indirect firing capability.

## Endnotes

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<sup>2</sup> Sean MacFarland, Michael Shields, and Jeffrey Snow, "White Paper: The King and I: The Impeding Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commander (np:np): memo sent to the Chief of Staff of the Army, 2007. 1.

<sup>3</sup> William B. Caldwell, "Remarks at the Fires Seminar at Fort Sill, OK, 3 June 2008, 8.

<sup>4</sup> MacFarland, Shields, and Snow, "White Paper: The King and I: The Impending Crisis in Field Artillery's ability to provide Fire Support to Maneuver Commanders, 3.

<sup>5</sup> Michael Grice, "Resuscitating the King, Marine Corps Gazette, (October 2008), 21.

<sup>6</sup> Association of the United States Army, “Key Issues Relevant to U.S Army Fires and the Warfighter”, Torchbear Issue, (October 2009), 12.

<sup>7</sup> Daniel Pinnell, Michael Hartig, Michael Borg, et al. Untitled Monograph, (n.p., n.d), Unpublished draft article provided to author by COL Dan Pinnell, 1.

<sup>8</sup> Personal experience of the author. Assigned the responsibility as the Senior Fire Support Trainer at the National Training Center, from June 2007 to June 2008.

<sup>9</sup> Pinnell, Hartig, Borg, Untitled Monograph, 4.

<sup>10</sup> MacFarland, Shields, and Snow, “White Paper: The King and I: The Impending Crisis in Field Artillery’s ability to provide Fire Support to Maneuver Commanders, 2.

<sup>11</sup> Grice, “Resuscitating the King”, 22

<sup>12</sup> Pinnell, Hartig, Borg, Untitled Monograph, 2.

<sup>13</sup> MacFarland, Shields, and Snow, “White Paper: The King and I: The Impending Crisis in Field Artillery’s ability to provide Fire Support to Maneuver Commanders, 1.

<sup>14</sup> Pinnell, Hartig, Borg, Untitled Monograph, 13.

<sup>15</sup> U.S. Department of the Army, (Draft), Field Manual 3-09 *Fire Support*, (Washington, DC: U.S Department of the Army, n.p., n.d.), 3.

<sup>16</sup> Timothy Slinger, “Degradation of Artillery Skills”, United States Marine Corps Command and Staff College, Marine Corps University, April 2009, 9

<sup>17</sup> Pinnell, Hartig, Borg, Untitled Monograph, 13.

<sup>18</sup> Loyd Gerber, “Reset – Rebuilding FA Core Competencies for Future Full-Spectrum Operations”, Field Artillery, (March – April 2007), 14.

<sup>19</sup> Ibid. 18.

<sup>20</sup> Pinnell, Hartig, Borg, Untitled Monograph, 2.

<sup>21</sup> Ibid. 2.

<sup>22</sup> Ibid. 1.

<sup>23</sup> Ibid. 1.

<sup>24</sup> Ibid. 1.

<sup>25</sup> Timothy Slinger, “Degradation of Artillery Skills”, United States Marine Corps Command and Staff College, Marine Corps University, April 2009, 9

<sup>26</sup> U.S. Department of the Army, (Draft), Field Manual 3-09 *Fire Support*, (Washington, DC: U.S Department of the Army, n.p., n.d.), 8.

<sup>27</sup> Ibid. 10.

<sup>28</sup> MG Peter Vangel, "Commanding General" briefing slides with scripted commentary, Fort Sill, OK, 29 October 2008. 17.

<sup>29</sup> Ibid. 31.

<sup>30</sup> Pinnell, Hartig, Borg, Untitled Monograph, 3.

<sup>31</sup> Grice, "Resuscitating the King", 24

<sup>32</sup> MG Peter Vangel, "Commanding General" briefing slides with scripted commentary, Fort Sill, OK, 29 October 2008. 17.

<sup>33</sup> Army News Service, "High-Tech Army Training – The Joint Fires and Effects Training System", September 2003, 1.

<sup>34</sup> L3 Communications, "FSCATT – Fire Support Combined Arms Tactical Trainer", September 2000, 2.

<sup>35</sup> U.S Army Field Artillery Center, Field Artillery Campaign Plan (Draft), (Fort Sill, Oklahoma) September 2008, C-3-5.

<sup>36</sup> Association of the United States Army, "Key Issues Relevant to U.S Army Fires and the Warfighter", Torchbear Issue, (October 2009), 15.

<sup>37</sup> Samuel R. White, "Fires – a Joint Professional Bulletin for U.S. Field and Air Defense Artillerymen. The U.S. Army Professional Writing Collection.", [http://www.army.mil/professionalwriting/volumes/volume6/october\\_2008/10\\_08\\_4.html](http://www.army.mil/professionalwriting/volumes/volume6/october_2008/10_08_4.html) 31 January 2009) 1.

<sup>38</sup> "Active, Army and USMC FA in CONUS and OCONUS", Fires, (November – December, 2009), 25 – 27.

<sup>39</sup> Samuel R. White, "Fires – a Joint Professional Bulletin for U.S. Field and Air Defense Artillerymen. The U.S. Army Professional Writing Collection.", [http://www.army.mil/professionalwriting/volumes/volume6/october\\_2008/10\\_08\\_4.html](http://www.army.mil/professionalwriting/volumes/volume6/october_2008/10_08_4.html) 31 January 2009) 1

<sup>40</sup> Noel Nicolle, "Effects of Modularity on the Field Artillery Branch", USAWC Strategy Research Project AY09, 25.

<sup>41</sup> United states Army Field Artillery School, "Field Artillery Strategy", (July 2009)pg 6

<sup>42</sup> Ross Ridge,"The Field Artillery Strategy", Fires, (September-October 2009), 8.

<sup>43</sup> William B. Caldwell, "Remarks at the Fires Seminar at Fort Sill, OK, 3 June 2008, 5.

<sup>44</sup> Ross Ride, "The Field Artillery Strategy", Fires (September-October 2009) 8.

<sup>45</sup> Ibid. 9.

<sup>46</sup> Joint Chiefs of Staff, Joint Publication 3-09 *Joint Fire Support*, (Washington, DC: Joint Staff, November 13, 2006), Viii .

<sup>47</sup> Daryl Fullerton, “ANA artillery: Training the Trainer”, *Fires*, (May 2009), 18

<sup>48</sup> Ross Ride, “The Field Artillery Strategy”, *Fires* (September-October 2009) 8-9.

<sup>49</sup> U.S Army Field Artillery Center, Field Artillery Campaign Plan (Draft), (Fort Sill, Oklahoma) September 2008, C-3-2.

<sup>50</sup> U.S Army Field Artillery Center, Field Artillery Campaign Plan (Draft), (Fort Sill, Oklahoma) September 2008, 3-5

<sup>51</sup> William B. Caldwell, “Remarks at the Fires Seminar at Fort Sill, OK, 3 June 2008, 8.

<sup>52</sup> Michael Grice, “Resuscitating the King, *Marine Corps Gazette*, (October 2008), 24.